Architecture Integration Capabilities Definition

May 4, 2004

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eLog21 Future State Systems Architecture

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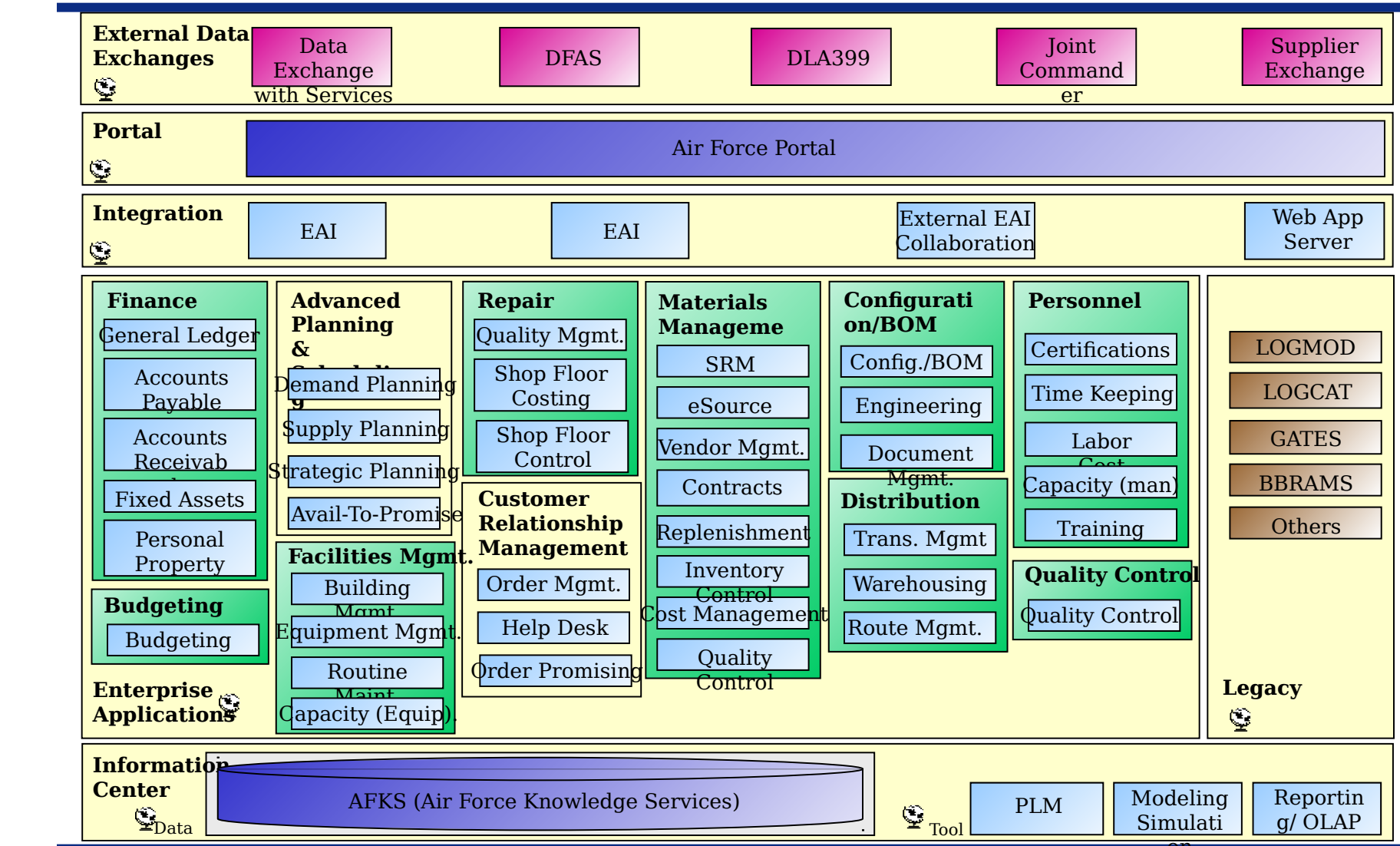
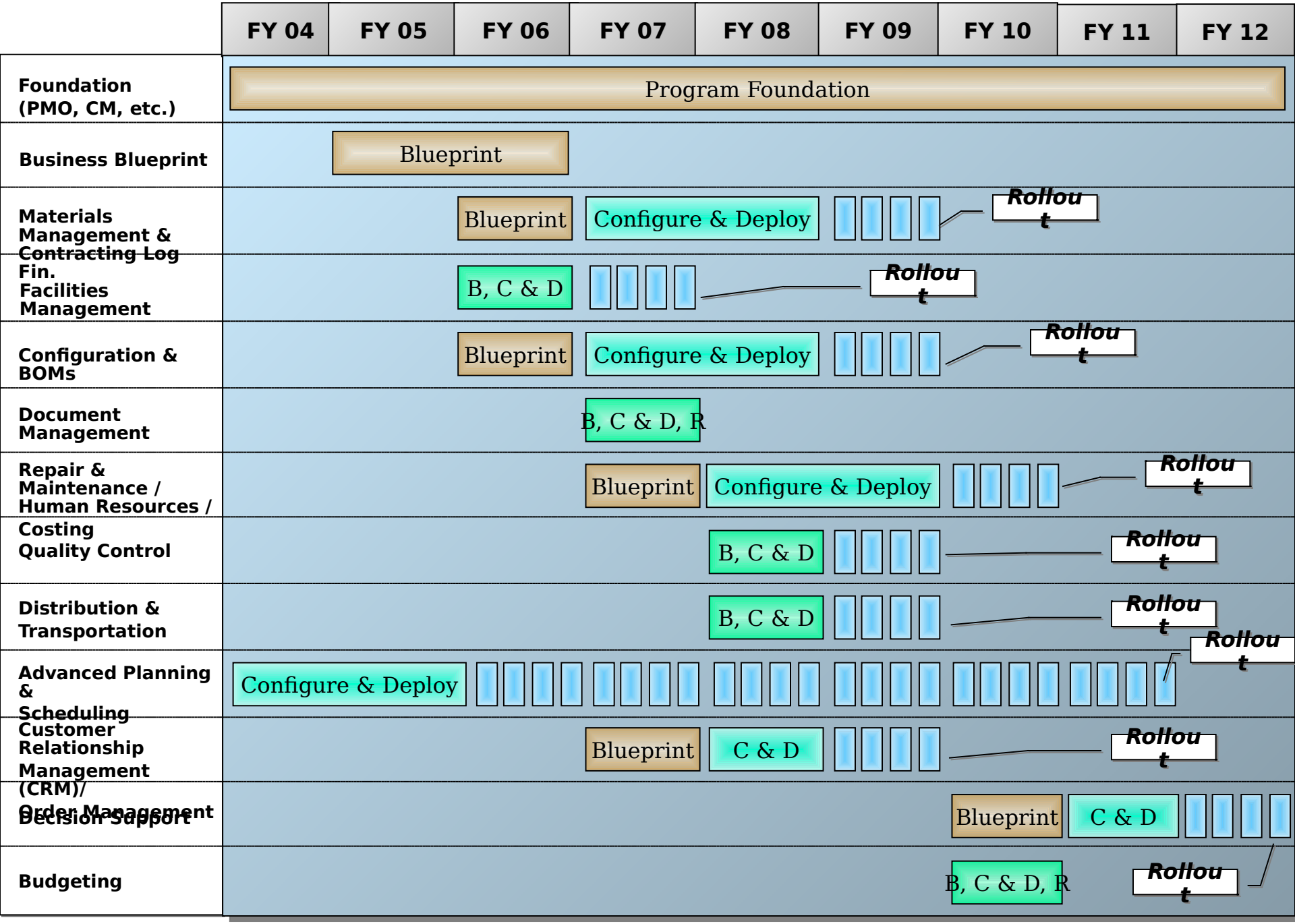


LogEA leverages GCSS-AF Technical Architecture


FY 04
FY 05
FY 06
FY 07
FY 08
FY 09
FY 10
FY 11
FY 12
Foundation (PMO, CM, etc.)
Program Foundation
Business Blueprint
Blueprint
Materials Management & Contracting Log
Blueprint
Configure & Deploy
Rollout
Fin. Facilities Management
B, C & D
Rollout
Configuration & BOMs
Blueprint
Configure & Deploy
Rollout
Document Management
B, C & D, R
Repair & Maintenance / Human Resources /
Blueprint
Configure & Deploy
Rollout
Costing Quality Control
B, C & D
Rollout
Distribution & Transportation
B, C & D
Rollout
Advanced Planning & Scheduling
Configure & Deploy
Rollout
Customer Relationship Management (CRM)/ Order Management
Blueprint
C & D
Rollout
Decision Support
Blueprint
C & D
Budgeting
B, C & D, R
Rollout

Business Blueprint

Business Blueprint

- This phase will begin the implementation of the ERP solution for the AF.
- Key Air Force personnel and consultants will conduct Business Process Reengineering (BPR) to define future “To-Be” AF business processes.
- They will leverage AF requirements, industry best practices and Subject Matter Experts (SMEs), to determine the future direction of the organization from a business process perspective.
- Roles and jobs will also be mapped to the future processes.
- AF and consultant personnel will define the systems organizational structure by mapping operational structures to design tables, identifying significant functional points of integration, building-out the ERP data model with Air Force specific requirements, and populating key master data fields with Air Force data.

Materials Management and Contracting

Materials Management and Contracting

- A single source of master data (including item master data, vendor master data and purchasing information).
- Purchase requisitions are managed and procurement methods are evaluated.
- Potential vendors are selected and open solicitation begins for material acquisition.
- Proposals are evaluated and awards are proposed. Decisions are made and procurement occurs.
- Other phases in an ERP also support material handling functions, and business processes generally span multiple modules.

Materials Management and Contracting

Functionality Includes

- Inventory Management, Warehousing
- Purchasing, Contract Management
- Third-Party Processes (Drop-Ship) (parts of this process also occur in Order Management)
- Inbound and Outbound Shipments
- Creating and Processing Deliveries
- Goods Receipt Process
- Make-to-Stock, Make-to-Order
- Production Orders and Execution
- Scheduling Agreements
- Vendor Evaluation
- Shelf-Life, Expiration Date , HAZMAT

Materials Management and Contracting

Financial Reporting (included under Materials Management and Contracting for estimation and modeling purposes)

- Financial reporting and related information (financial statements will be included if the system becomes the book of record).
- Transactions within the ERP system are tied to financial documents (including Funds Appropriation, Accounts Payable, Accounts Receivable, General Ledger, Project Costing and Product Costing).
- Accounts Payable is the value of goods and services acquired for which payment has not yet been made.
- Accounts Receivable is the value of goods shipped or services rendered to a customer on which payment has not yet been received--usually includes an allowance for bad debts.
- General Ledger is the ledger that contains all of the financial accounts of a business; including offsetting debit and credit accounts and control accounts.
- Implementation of this module will enable future state material management processes (e.g. Inventory control, SRM, eSourcing).

Materials Management and Contracting

Benefits

- Three-way match between purchase order, invoice and goods receipt.
- Users will have an enterprise view of inventory levels, facilitating robust inventory control processes by automatically creating demands as inventory balances reach predetermined minimum levels.
- Inventory replenishment will be managed consistently and in alignment with enterprise needs.
- Material replenishment requirements will be triggered by Material Requirements Planning (MRP) based on repair schedules and by material requests based upon established inventory levels.
- Shelf life control and cycle counting occurs to ensure inventory quality and accuracy.
- Material movement instructions will be triggered by sourcing and delivery business rules.

Materials Management and Contracting

Benefits Continued

- Special handling requirements, such as HAZMAT, will be an automatic part of the order detail.
- Cost management processes are improved. As materials move through the enterprise, the associated financial transactions including purchase order generation and payment, inventory valuation, material issues and receipts, etc will occur.
- A robust Supplier Relationship Management (SRM) process is implemented.
- Supplier performance will be measured and Joint Service Agreements will guide performance improvements.
- The Enterprise will have total asset visibility; how much, where and status.

Facilities Management

Facilities Management

- **Provides vital information about the facilities and equipment used within logistics processes across the Air Force.**
- **Focuses on enabling the processes used to track, maintain, and value logistics facilities and equipment, broadly defined to include buildings, machinery, or tooling.**

Facilities Management

Benefits

- Enables the establishment of Building Management, Equipment Management, Routine Management, and Capacity (Equipment) Management.
- Enables serialized tracking of fixed assets, which will allow for better management of logistics assets by making equipment history, scheduled routine maintenance, usage statistics and other life cycle data available to all users.
- Enables capacity planning and shop floor control during the Repair and Maintenance module.
- Enables systematic accounting for facility and equipment assets, for assessing their performance and capability and for planning Facility and Equipment maintenance, upgrade, and capacity increments.

Configuration and BOMs

Configuration and BOMs

- Enables the establishment and management of equipment masters.
- Maintains BOMs, engineering and other related configurations.
- Links design and engineering (CAD) applications with configuration/BOMs to provide accurate bill-of-materials, routings, revision levels, and effectivity dates.

Additional Functionality includes:

- Details of BOM Functionality and Usage
- BOM Evaluations
- Closed Variant and Multiple BOMs
- Alternate and Parallel Sequence Routings
- Reference Operation Sets and Scheduling

Configuration and BOMs

Benefits

- An engineering change management process will control the review and approval of material design changes and to link design activities with repair.
- Systematic integration will vastly improve the speed of update and the quality of data and will eliminate much labor intensive activities currently expended in repair to capture, cleanse, and enter data.
- Configuration data will be available enterprise-wide eliminating redundant, error-prone, data.
- Data will be captured, cleansed and migrated to BOM and End Item configurations.

Document Management

Document Management

- Identification of every type of document used in current as well as future state processes.
- Documents are attached to specific equipment, assets, material, and transactions.
- Data cleansing will standardize formats and methods used to link data.
- This module provides conversion from the legacy systems which will require extensive data conversion activities.
- Includes document maintenance for document searching and retrieval.

Document Management

Benefits

- **Essential to transition from legacy to ERP systems. It will enable critical documents initiated in the legacy environment to be processed also within the ERP environment with a minimum of duplicative effort.**
- **Populate the ERP data model with critical data that will be managed totally within ERP at future stages of implementation.**
- **During transition, users will be assured that data in legacy systems and in ERP environments are consistent.**

Repair and Maintenance (and Human Resources)

Repair and Maintenance

- **Provides the functionality for controlling and managing unscheduled, scheduled, corrective and preventive maintenance planning and operations.**
- **Provides visibility into maintenance costs, equipment history and maintainability and reliability data.**
- **Includes the allocation of parts and labor to a repair order; equipment and facilities repair tasks and operations, and repair personnel capacity and availability.**
- **Creates maintenance notifications and material orders, and provides technical specifications to operators.**
- **Sends information to and receives information from the APS, cost, materials, and HR modules.**

Repair and Maintenance (and Human Resources)

Human Resources (included under Repair and Maintenance for estimation and modeling purposes)

- Includes workforce capacity planning and resource scheduling. This is based on job requirements and workload. Example: the capacity of organizational level resources within a given job classification can be mapped to a list of known repair requirements within the confines of the maintenance module.
- Provides visibility into the number of available personnel and the number of hours they have available to perform work over a given period of time.
- Provides visibility into personnel skills, training and qualifications of the maintenance resources.
- Determines when personnel will need training to maintain their current skill sets, education, and certifications.
- Tracks a resources career planning and progression.
- HR modules usually include timekeeping for payroll purposes, and expense tracking (e.g. travel, meals and overtime).
- Determines total time reported for compensation and cost allocation.

Repair and Maintenance (and Human Resources)

Benefits

- Repair and Maintenance will be able to rely upon inventory, supplier, and BOM data, which will greatly improve the accuracy of the shop floor scheduling process.
- Material Management, which requires accuracy in repair schedules and component material needs, will be able to create more reliable replenishment and procurement decisions.
- Equipment capacity and capability is incorporated into shop floor schedules.
- There will be a single, Air Force wide shop floor scheduling and control solution. A common set of data, process, and priorities will drive each repair site.
- Workloads, personnel, and tools will be highly interchangeable creating improved load balancing and greater ability to respond to enterprise requirements.

Repair and Maintenance (and Human Resources)

Benefits Continued

- Work status, backlogs, equipment and tool availability, quality control and other key repair data will be visible across the enterprise, enabling far greater cooperation.
- Shop floor scheduling and routing will be automated and work orders will reflect actual parts inventory status. This will eliminate manual activities and will result in shop floor schedules, which can be executed without disruptions from unanticipated material shortages.
- Establishment of a work order management system to track all work performed at the End Item level. This would track costs, work effort and history for end-item levels.
- Establish Shop Floor Control System to manage parts, labor, equipment and facilities. It will capture, store and manage shop floor capacity and shop floor routings. It will capture failure data, present technical specifications, perform shop capacity scheduling, provide total asset visibility and determine repair costing through the shop.

Quality Control

Quality Control

- Provides improved capability for managing quality from a comprehensive lifecycle management perspective.
- Allows for proactive management of weapon systems, vehicles, equipment and other major end items.
- Provides users the ability to manage to a plan rather than react solely to requirements as they occur. Data will be collected and reported with the traceability back to the transaction and trending analysis.

Quality Control

Benefits

- Automation and systemization of quality control.
- In-shop inspections will be tracked.
- Trend analyses and causal analysis can be performed for diagnosis and improvement.
- Quality information will be visible enterprise-wide for assessment and use in supplier evaluations, life cycle assessment, and considers to preventive and predictive repair strategies.
- Quality assessments can be leveraged by APS, to improve forecast accuracy and to upgrade repair plans.
- Works in conjunction with the Material Management and Repair modules to record statistical metrics, product and materiel failures and other lifecycle management related data. Reported failures from customers via Order Management/CRM will also be attributed to the specific materials and/or assets.

Distribution and Transportation

Distribution and Transportation

- Includes the storage, picking, shipping, and transporting of the materials / assets and the physical control of assets including cycle counting and inventory tracking.
- Scheduling, warehousing and transportation activities and the creation of all documentation (e.g. shipping and exporting) required to support the physical process is also included.
- Addresses partnering and integration with 3PLs or DoD fleet for the shipment of the packages.
- Includes basics of shipment cost processing, cost calculation and control, and shipment cost settlement.
- Considers multi-leg routing, location constraints, and account profiles.

Distribution and Transportation

Benefits

- Introduce enterprise-wide best practices of Advanced Ship Notice and Material Tracking, which will increase the certainty with which customers and operations view material availability schedules.
- Repair activities will be able to make use of in-transit information for shop floor scheduling and customers can plan their activities based on time certain delivery.
- Distribution and Transportation will be paperless and work will be automatically scheduled and routed based on material availability and due dates.
- Integration with service providers (3PL and DoD) will be automated and will have positive feedback about status and performance.

Advanced Planning and Scheduling (APS)

APS

- Develops unconstrained forecast / requirement across the enterprise (maintenance, supply & transportation).
- Determines constrained execution plans based on customer need (priority / need date) and available resources.
- Promotes collaboration with the customers and key suppliers to mitigate non-support issues.
- Provides plans to be executed in the Repair, Distribution and Transportation, Material Management, and Customer Relations Management processes. Additionally, outputs from the above functional areas are used as inputs into Supply Planning.
- Demand Planning will use statistical algorithms to provide the final statistical forecast. Model exceptions will be generated.
- Models will be fine-tuned using a variety of parameters (e.g. Serial Correlation, R-squared, Dynamic Mean and Seasonality).

Advanced Planning and Scheduling (APS)

APS Continued

- Includes new product introductions, phase-in and phase-outs, and product discontinuations.
- Forecast Performance metrics will be evaluated throughout the Planning Process.
- Fulfillment and Supply Planning will develop a replenishment plan for a distribution network.
- Dynamic Deployment functionality will be used to rebalance inventory.
- Substitution of items will utilize alternate items to fill orders for items that are temporarily out of stock.

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Advanced Planning and Scheduling (APS)

Benefits

- **Allows for single, best-of-breed, functionality for analyzing and forecasting requirements based upon operational plans and performance.**
- **Creates planning capabilities for Demand, Source and Supply, Production and Repair/Maintenance, Delivery and Transportation.**
- **Enables Logistics process to transition to an operate-to-plan model that is driven by enterprise goals. Shop floor scheduling will tie directly to maintenance planning and distribution will be driven by delivery plan.**

Customer Relationship Management (CRM) / Order Management

Customer Relationship Management (CRM) / Order Management (OM)

- Traces the order fulfillment process from the materiel/asset request to the fulfillment of the order.
- Manages all aspects of a customer profile.
- Customer orders are received and managed by performing an availability check, reviewing on-hand balances and location of materials.
- A promise date is confirmed, material is released and inventory balances are updated in the enterprise-wide system.
- If the material is not available, it may be substituted with a like item or placed on backordered.

Customer Relationship Management (CRM) / Order Management

Functionality Includes

- Order Processing
- Inventory Sourcing (in-house production / external procurement)
- Shipping
- Billing
- Controlling Elements of the Delivery, Creating and Processing Deliveries
- Checking Product Availability
- Returns and Credit Memo Processing
- Partner Determination, Material Determination
- Material Listing/Exclusion
- Product Selection
- Discounts, Surcharges, Promotions, Sales Offers
- Goods Issue Process
- Picking, Packing

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Customer Relationship Management (CRM) / Order Management

Benefits

- Provides customers with improved order creation capability, visibility to order status, accessibility to a help desk, which will have access to real-time inventory and delivery scheduling information at its disposal.
- Enables advanced shipped notices prior to shipment's arrival.
- Improves order promises based upon Available-To-Promise data.
- Accurate information about customer needs will facilitate collaboration with customers concerning delivery requirements, due dates, and supply alternatives.
- Customer and order information will drive Logistics Planning and Execution Processes to be more fully aligned to customer needs.
- Help desk functionality is provided to enable customers and users to request information related to orders, register complaints, and initiate technical assistance. This includes returns, complaint management, and customer history.
- Provides provisioning capability to include the ability to order parts and provide order status.

Decision Support

Decision Support

- Provides the capability to use enterprise-wide information to help make key management decisions.
- Analysis and reporting will extend to an Executive Dashboard, Balanced Scorecard, or Trend Analysis.
- Examples include Product Life Cycle Management (PLM), material reliability and usage evaluations for reliability centered maintenance (RCM), logistics network optimization, and financial modeling.
- Integrates information across process and functional areas and can include legacy system data.
- Includes both data collection / reporting and modeling / optimization / simulation capabilities.

Decision Support

Benefits

- Provides accurate and timely information for assessments to drive many decision processes, including Product Lifecycle Management and Financial Modeling.
- Take full advantage of the information captured and prepared in the Material Management, Repair, and Distribution modules, and the evaluations from the Quality and Customer Support modules.
- Enable AF Logistics to be forward thinking and to base those thoughts on realistic data about supply chain performance and supply chain plans.
- Modeling and Simulation bolt-ons will provide a more AF specific application to support the analysis and decision making process.
- Reporting Tools are also a suitable complement to provide a more user friendly 'look and feel' to the dashboard or manipulation of the data.

Budgeting

- The purpose of the Budgeting function is to better predict and manage the expenditures associated with procuring, repairing, managing, and distributing material blended with contingency programmatic factors.
- Activity levels drive the budget from the plans created in APS and historical data.
- Enables projections and ‘what-if’ scenarios.
- The respective organizational budgets can be assimilated for the POM process to create the AF Budget.
- Includes the functionality for developing budget proposals, for monitoring expenditures, for assessing variances and causes of variances, and for revising budgets based on changes in assumptions.

Budgeting

Benefits

- Links the operational data provided to a budgeting application and process.
- A single enterprise wide tool and process will support budget development, variance analysis, and re-planning based on high quality, high availability operations and planning data.

EAI

- The complex process of retrofitting existing hardware, software, and business processes together to enable new business solutions.
- An integration tool that enables modernization, consolidation, and coordination of computer applications in an enterprise.
- Used by enterprises that have existing legacy applications and databases and want to continue to use them, while adding or migrating to a new set of applications that exploit the Internet, e-commerce, extranet, and other new technologies.
- Using EAI may involve developing a new total view of an enterprise's business and its applications, seeing how existing applications fit into the new model, and then devising ways to efficiently reuse what already exists while adding new applications and data.
- In AF environment, EAI will effectively integrate an ERP system with legacy application and bolt-ons.

EAI

Benefits

- Shift in focus from systems-that-interface to business transactions.
- Functionally-seamless interfaces between components.
- Central routing: guaranteed delivery, integrity, and currency.
- Each application builds exactly one interface per business transaction.
- EAI typically created via hardware, middleware, portals, and/or legacy upgrades.
- Upgrades typically include wrapping web services around an application.
- Integrates different software applications; ERP is one integrated application.
- Integrates across different hardware platforms.
- Requires data harmonization across the enterprise within existing systems.
- Requires data sourcing strategies to support analyses.
- Necessitates detailed integration and upgrade strategies.